# Curriculum Vitae


## Sarawut Ninsawat

**Assistant Processor**
**Asian Institute of Technology**
**Thailand**


**Updated on January 2018**

# Curriculum Vitae

## I. Biographical Data

**A. Name of candidate Sarawut Ninsawat**

**B. Education**

| DEGREE | YEAR | INSTITUTION |
|---|---|---|
| B. Sc. (Environment Science) | 2000 | Silpakorn University, Thailand |
| M. Sc. (Space Technology Applications and Research) | 2002 | Asian Institute of Technology, Thailand |
| Doctoral of Creative Cities (Urban Information) | 2009 | Osaka City University, Japan |

**C. Positions held**

| YEAR | ORGANIZATION | DESIGNATION | DUTIES |
|---|---|---|---|
| July 2015 – present | Remote Sensing and Geographic Information Systems, Asian Institute of Technology | Assistant Professor | Teaching and Research |
| January 2018 - present | Remote Sensing and Geographic Information Systems, Asian Institute of Technology | Degree Program Committee Chairs | Department Administrative |
| January 2015 – January 2017 | Remote Sensing and Geographic Information Systems, Asian Institute of Technology | Interim Field Coordinator | FoS Administrative |
| 2013 – July 2015 | Remote Sensing and Geographic Information Systems, Asian Institute of Technology | Lecturer | Teaching and Research |
| 2011 – 2013 | Remote Sensing and Geographic Information Systems, Asian Institute of Technology | Instructor | Teaching and Research |
| 2009 – 2011 | GEO Grid Research Group, Information Technology Research Institute, National Institute of Advanced Industrial Science and Technology, Japan | Postdoctoral Researcher | Research |
| 2003 – 2005 | Space Technology Applications and Research, Asian | Project Researcher | Research and Teaching assistant |

| | | | |
|---|---|---|---|
| | Institute of Technology | | |
| 2000 (Aug – Dec) | Department of Liberal Arts, Thammasat University | Special Teacher | Teaching |
| 2000 ( Jun – Aug) | Space Technology Applications and Research, Asian Institute of Technology | Research Assistant | Research |

**D. Special honors and awards**

| YEAR | AWARD |
|---|---|
| 1998 – 2000 | Three continuous prizes of highest grade from Environmental Science, Silpakorn University, Thailand |
| 2000 | First Rank and Second Class Honors with GPA 3.31 from Environmental Science, Silpakorn University, Thailand |
| 2000 | First outstanding graduated student of Thailand in field of Environmental science in year of 2000 given by the Thailand scientist association, Chulalongkorn University, Thailand |
| 2002 | Second Rank with GPA 3.94 from Space Technology Applications and Research, Asian Institute of Technology, Thailand |
| 2006 | Awarded Monbukagakusho (Monbusho) Scholarship from Japanese Government for Doctoral degree at Osaka City University, Osaka, Japan |

## II. Pedagogy

**A. Experience as a teacher**

1. Courses taught, including courses taught at partner institutions. Student enrollment in each course taught and average grade in each course.

| YEAR | COURSE CODE/TITLE | # OF STUDENTS | AVERAGE GPA |
|---|---|---|---|
| Aug 2011 | AT76.9021/ Selected Topic WebGIS Technology (credit load 2) | 28 | 3.43 |
| Aug 2011 | IN84.21/ Remote Sensing and GIS for Disaster Mitigation (credit load 1.5 of 3) | 9 | 3.5 |
| Jan 2012 | AT76.09/ Digital Image Processing in Remote Sensing (credit load 3) | 14 | 3.43 |
| InterSem 2012 | AT76.9022/ Selected Topic Free and Open Source Software for Geospatial Analysis (credit load 2) | 11 | 3.65 |
| Aug 2012 | AT76.9021/ Selected Topic WebGIS Technology (credit load 2) | 11 | 3.27 |
| Aug 2012 | AT76.03/ Remote Sensing (credit load 3) | 16 | 3.33 |
| Aug 2012 | IN84.21/ Remote Sensing and GIS for Disaster Mitigation (credit load 1.5 of 3) | 9 | 3.56 |

| | | | |
|---|---|---|---|
| Jan 2013 | AT76.03 Remote Sensing (credit load 3) | 4 | 3.63 |
| Jan 2013 | AT76.09/ Digital Image Processing in Remote Sensing (credit load 3) | 4 | 3.63 |
| Jan 2013 | AT76.9027/ Selected Topic: Workshop on Sensor Web (credit load 1) | 5 | 4 |
| August 2013 | IN84.21/ Remote Sensing and GIS for Disaster Mitigation (credit load 1.5 of 3) | 12 | 3.58 |
| Jan 2014 | AT76.09/ Digital Image Processing in Remote Sensing (credit load 3) | 8 | 3.38 |
| Jan 2014 | AT76.9021/ Selected Topic WebGIS Technology (credit load 2) | 11 | 3.36 |
| InterSem 2014 | AT76.9022/ Selected Topic Free and Open Source Software for Geospatial Analysis (credit load 2) | 19 | 3.32 |
| Aug 2014 | AT76.9021/ Selected Topic WebGIS Technology (credit load 2) | 15 | 3.27 |
| Jan 2015 | AT76.03/ Remote Sensing (credit load 3) | 18 | 3.25 |
| Jan 2015 | AT76.09/ Digital Image Processing in Remote Sensing (credit load 3) | 11 | 3.46 |
| InterSem 2015 | AT76.13/Remote Sensing Data Analysis (credit load 1 of 2) | 30 | 3,35 |
| August 2015 | AT76.9021/ Selected Topic WebGIS Technology (credit load 2) | 29 | 3.24 |
| Jan 2016 | AT76.03/ Remote Sensing (credit load 3) | 22 | 2.91 |
| Jan 2016 | AT76.09/ Digital Image Processing in Remote Sensing (credit load 3) | 8 | 3.38 |
| InterSem 2016 | AT76.13/Remote Sensing Data Analysis (credit load 1 of 2) | 37 | 3.06 |
| August 2016 | AT76.9021/WebGIS Technology (credit load 2) | 39 | 3.22 |
| Jan 2017 | AT76.09/Digital Image Processing in Remote Sensing (credit load 3) | 5 | 3.4 |
| Jan 2017 | AT76.10/Advanced Remote Sensing (credit load 1 of 3) | 16 | 3.47 |
| Jan 2017 | AT76.9036/Selected Topic Geospatial Modeling for Environment (credit load 1%) | 27 | 3.31 |
| InterSem 2017 | AT76.9022/ Selected Topic Free and Open Source Software for Geospatial Analysis (credit load 2) | 5 | 3.2 |
| August 2017 | AT76.9021/ Selected Topic WebGIS Technology (credit load 2) | 29 | 3.31 |
| August 2017 | AT76.9038/Selected Topic: Positioning and Location-Based Services Technology (credit load 1) | 18 | 3.25 |
| Jan 2018 | AT76.09/Digital Image Processing in Remote Sensing (credit load 3) | 11 | |
| Jan 2018 | AT76.9040/Selected Topic: Unmanned Aerial Vehicle Application and Processing (credit load 1) | 19 | |
| Jan 2018 | AT76.9041/Selected Topic Research Methodology in Geoinformatics (credit load 33%) | 44 | |

**B. Evaluation of teaching**

1. Copy of student teaching evaluation reports - *see attachment*
2. Copy of student research supervision evaluation reports - *see attachment*

**C. Pedagogical Development**

1. Publications: textbooks, laboratory manuals, articles in journals oriented toward pedagogy.

- Laboratory instruction in AIT
  - Remote sensing
  - WebGIS Technology
  - Free and Open Source Software for Geospatial Analysis
  - Workshop on Sensor Web
  - Remote Sensing Data Analysis
  - Advanced Remote Sensing (Revised)
  - Unmanned Aerial Vehicle Application and Processing

2. Grants related to pedagogy and curriculum development.

- Erasmus+ Capacity Building in Higher Education : Innovation on Remote Sensing Education and Learning (IRSEL)

3. Initiation of new courses, degree programs, curricula (indicate the period delivered)

- AT76.9021 "Selected Topic WebGIS Technology" (delivered from August 2011 semester)
- AT76.9022 "Selected Topic Free and Open Source Software for Geospatial Analysis" (delivered from Inter Semester 2012)
- AT76.9027 "Selected Topic: Workshop on Sensor Web" (delivered in January Semester 2013)
- AT76.9038 "*Selected Topic: Positioning and Location-Based Services Technology"* (delivered from August Semester 2017)
- AT76.9041 "*Selected Topic Research Methodology in Geoinformatics*" (delivered in January Semester 2018)
- AT76.9040 "*Selected Topic: Unmanned Aerial Vehicle Application and Processing*" (delivered in January Semester 2018)

4. Development and introduction of innovative pedagogical techniques.

- Use paper-less and cloud computing service: The Google class room service was used for all classes. Since the AIT student email is maintained with Google then it can be used for authentication of all Google services. In the Google class room service, the assignment can be established with necessary material in google drive, link, youtube. Additionally, the due date of submission can be defined. Student can submit the assignment, verify the completeness, send private message for asking the questions of assignment. In case, student submit the assignment after the deadline. The "late submission" flag is indicated.
- Provide ready-reference of lecture/laboratory instruction material by putting course material online on Google class room service
- Use the virtual machine technology in the laboratory session for arranging same system environment for all students.
- Student can inquiry my availability from online Google Calendar since I always update my schedule from computer and smartphone.
- Encourage student and make them participate in an interactive learning process

- Giving prompt feedback to the students
- Arrange online meeting with student via skype during the trip or students are in the field.

5. Participation in workshops, short courses, etc. relating to improvement of teaching.
   - Workshop Workshop on remote sensing experiences at University of Natural Resources and Life Sciences (BOKU), Austria (under IRSEL Erasmus+ project) : 27th – 31st August 2018
   - Workshop on systematic course evaluation system at ITC, Faculty of Geo-Information Science and Earth Observation, Netherland (under IRSEL Erasmus+ project) : 4th – 8th March 2019
   - Workshop on innovative teaching/learning methodologies at Department of GIS, Cartography and Remote Sensing, Jagiellonian University, Poland (under IRSEL Erasmus+ project) : 26th-30th August 2019

## III. Student Research Supervision

**A**. **Theses supervised.** Number of master and doctoral students graduated each year, on which the faculty served as committee chair or co-chair.

**3.A.1** Summary of student research supervision at AIT (August 2011–15th January 2018)

| | **GRADUATED** | | **IN-PROGRESS** | |
|---|---|---|---|---|
| **STUDENTS** | Chair of the Committee | Co-Chair of the Committee | Chair of the Committee | Co-Chair of the Committee |
| Doctoral | | | 4 | |
| Master's | 39<br>9 (2017)<br>8 (2016)<br>6 (2015)<br>2 (2014)<br>9 (2013)<br>5 (2012) | 3<br>2 (2014)<br>1 (2012) | 9 | |

## IV. Research

### A. Publications

Publications must be listed with complete citations in the categories indicated below. Include all names of authors in the order in which they appear. List the number of the first page and last page of the paper. If papers are submitted or accepted for publication, copies of the letter of receipt or acceptance must be provided. Manuscripts in preparation should not be listed. Papers of a principally pedagogical nature must be listed in Section II, C.

1. Books and Monographs
   None
2. Book Chapters
   None
3. Refereed journal articles: international, regional, national. For each article, indicate the publisher of the journal and the number of SCOPUS citations.

3.A Summary of journal articles published

| Refereed International Journals | Refereed Regional Journals | Refereed National Journals |
|---|---|---|
| (14) | - | (3) |

| In Progress | | |
|---|---|---|
| Refereed International Journals | Refereed Regional Journals | Refereed National Journals |
| (5) | - | - |

## 3.B Articles in Refereed **International Journals**

1. M. Sidiqi, S. Shrestha and **S. Ninsawat** (2018). Projection of Climate Change Scenarios in the Kabul River Basin, Afghanistan. *Current Science*, 114, 8 pages (ISSN: 0011-3891) (Impact Factor 2016: 0.843)

2. **S. Ninsawat** and M. D. Hossain (2016) Identifying Potential Area and Financial Prospects of Rooftop Solar Photovoltaics (PV). *Sustainability*, 8(10), 16 pages (ISSN:2071-1050) (Impact Factor 2016: 1.789)

3. A. Sitthi, M. Nagai, M. Dailey and **S. Ninsawat** (2016) Exploring Land Use and Land Cover of Geotagged Social-Sensing Images Using Naive Bayes Classifier. *Sustainability*, 8(9), 22 pages (ISSN:2071-1050) SCOPUS citation : 3 (Impact Factor 2016: 1.789)

4. C. Losiri, M. Nagai, **S. Ninsawat** and R. P. Shrestha (2016). Modeling urban expansion in Bangkok Metropolitan region using demographic-economic data through cellular automata-markov chain and multi-layer perceptron-markov chain models. *Sustainability*, 8(7), 23 pages (ISSN:2071-1050) SCOPUS citation : 6 (Impact Factor 2016: 1.789)

5. M. D. Hossain, **S. Ninsawat**, S. Sharma, T. Koottatep and Y. Sarathai (2016). GIS oriented service optimization for fecal sludge collection. *Spatial Information Research*, 9 pages. (ISSN:236-3286)

6. D. Pinto, S. Shrestha, M. S. Babel, and **S. Ninsawat** (2015). Delineation of groundwater potential zones in the Comoro watershed, Timor Leste using GIS, remote sensing and analytic hierarchy process (AHP) technique. *Applied Water Science*, 17 pages. (ISSN: 2190-5495) (SJIR 2016: 0.125)

7. R. B. Reyes, M. Nagai, Y. Kamiya, T. Tipdecho and **S. Ninsawat** (2015). Effect of sea level rise in the validation of geopotential/geoid models in Metro Manila, *Philippines. Survey Review*, 47(342). pp. 211-219. (ISSN: 0039-6265) SCOPUS citation : 1 (Impact Factor 2016: 0.929)

8. S. Bhagabati, A. Kawasaki, M. Babel, P. Rogers and **S. Ninsawat** (2014). A Cooperative Game Analysis of Transboundary Hydropower Development in the Lower Mekong: Case of the 3S Sub-basins. *Water Resource Management*, 22 pages. (ISSN: 1573-1650) SCOPUS citation : 5 (Impact Factor 2016 : 2.848)

9. R. Samphutthanon, N. K. Tripathi, **S. Ninsawat**, R. Duboz (2013). Spatio-Temporal Distribution and Hotspots of Hand, Foot and Mouth Disease (HFMD) in Northern Thailand. *Int. J. Environ. Res. Public Health*, 11(1). pp. 312-336. (ISSN: 1660-4601) SCOPUS citation : 18 (Impact Factor 2016 : 2.101)

10. S. Masumoto, S. Nonogaki, T. Nemoto, K. Sakurai, **S. Ninsawat**, S. Iwamura, H. Shoga, V. Raghavan and K. Shiono (2012). Development of Prototype System of Three Dimensional Geologic Modelling for Providing Geologic Information using Web-GIS. *International Journal of Geoinformatics*, 8(1). pp. 53-60. (ISSN: 1686-6576) (SJR 2016 : 0.18)

11. **S. Ninsawat**, V. Raghavan and S. Masumoto (2008). Integration of Web Processing Service and Sensor Observation Service for Distributed Geoprocessing using Real-Time Data. *Geoinformatics*, 19(3). pp. 171-179. (ISSN: 0388-502X)

12. **S. Ninsawat**, V. Raghavan, S. Masumoto and Y. Chemin (2007). Web Processing Service for Spatial Analysis using PyWPS and GRASS GIS. *International Journal of Geoinformatics*, 3(4). pp. 19-25. (ISSN: 1686-6576) (SJR 2016 : 0.18)

13. D. Yoshida, **S. Ninsawat** and V. Raghavan (2007). Service Oriented Geospatial Data Management using Free and Open Source Software - A Prototype for Northern Region of the Philippines. *International Journal of Geoinformatics*, 3(4). pp. 9-18. (ISSN: 1686-657) (SJR 2016 : 0.18)

14. **S. Ninsawat** and N. Kumar Tripathi (2007). Mapping Coral Reef Condition in Phi Phi Island, Thailand using Image Fusion and Mahalanobis Distance Classifier. *International Journal of Geoinformatics*, 3(1) . pp. 67-74. (ISSN: 1686-6576) (SJR 2016 : 0.18)

### 3.C Articles in Refereed **Regional Journals**

None

### 3.D Articles in Refereed **National Journals**

1. A. Kodaka, A. Kawasaki, M. Ohara, D. Komori and **S. Ninsawat** (2013). A Study on the Possibility of Mobile Phone Use as a Disaster Information Dissemination Mean for Rural Mountainous Areas in Thailand. *Institute of Social Safety Science*, 21, pp. 159-167. (ISSN: 0037-105X)[in Japanese]

2. N. Hoa Binh, **S. Ninsawat**, V. Raghavan, K. Kita and D. Yoshida (2006). A Mechanism for Location Based Library Services - Implementing Remote Book Lending System using Open Source Software. *Journal of Informatics*, 3(1). (ISSN: 1349-4511)

3. P. Bencharat, S. Lertlum and **S. Ninsawat** (2006). Mapserver Implementation for Cultural Applications in Thailand, Utilizing Open Source Software. *Journal of Informatics*, 3(1). (ISSN: 1349-4511)

## 4. Papers in Refereed Conference Proceedings

1. S. Chaudhary, **S. Ninsawat** and T. Nakamura (2018) Development of Spectral Library for Trace Detection of Explosives. In: Geoinfotech 2018 conference, 1 - 2 February 2018, Bangkok, Thailand, 4 pages.

2. R. Samphutthanon, N. K. Tripathi, **S. Ninsawat**, and R. Duboz (2014) Integrating GIS with AHP and Fuzzy Logic to generate hand, foot and mouth disease hazard zonation (HFMD-HZ) model in Thailand. In: *ISPRS Technical Commission VIII Symposium*, 9-12 December 2014, Hyderabad, India, 14 pages.

3. C. Mahakant, **S. Ninsawat**, N. Kumar Tripathi and M. Nagai (2014) Investigation of the Appropriate Approach to Generate the Noise Map from Crowdsourcing. In*: The 1st International Conference on Geo-informatics for Graduate Students and Young Researchers*, 9 – 11 June 2014, Chaing Rai, Thailand, 7 pages.

4. J. Chaitamart, **S. Ninsawat**, N. Kumar Tripathi and S. Lertlum (2014) Development of a Location Based Service Application using Augmented Reality for Historical Tourism on an iOS Platform. In: *The 1st International Conference on Geo-informatics for Graduate Students and Young Researchers*, 9 – 11 June 2014, Chaing Rai, Thailand, 8 pages.

5. W. Sirirotjanawong, **S. Ninsawat**, N. Kumar Tripathi and V. Phonekeo (2013) An Online Disease Surveillance and Warning System. In: *HealthGIS 2013*, 21 – 23 August 2013, Pathumthani, Thailand, 6 pages

6. **S. Ninsawat**, Y. Tanaka, H. Yamamoto, S. Tilak and P. Arzberger (2013) GEO GRID Platform for Integrated Earth Sensing. In: *The International Conference on E-*

*Technologies and Business on the Web (EBW2013),* 7 – 9 May 2013, Bangkok Thailand, 7 pages.

7. L. Chudech, **S. Ninsawat** and K. Honda (2012) Data Assimilation of DSSAT Model with Remote Sensing for Yield Estimation in Rainfed Rice Field Area. In: *GIS-IDEAS 2012,* 16-20 October 2012, Ho Chi Minh, Vietnam, 8 pages.

8. H. SHOGA, S. Masumoto, K. Sakurai, S. Nonogaki, **S. Ninsawat**, S. Iwamura, M. Mitamura and K. Shiono (2010) Three Dimensional Subsurface Geologic Model of Western Osaka Plain using Borehole Data Constructed by Modelling System Based on Web-GIS. In: *GIS-IDEAS 2010,* 6-11 December 2010, Hanoi, Vietnam, 6 pages.

9. **S. Ninsawat**, H. Yamamoto, R. Nakamura, A. Kamei, S. Kato and S. Tsuchida (2010) Development of OGC Framework for Estimating Air Temperature from MODIS LST and Sensor Network. In: *WebMGS 2010: 1st International Workshop on Pervasive Web Mapping, Geoprocessing and Services,* 26-27 August 2010, Como, Italy, 6 pages (CDROM).

10. S. Masumoto, S. Nonogaki, **S. Ninsawat**, S. Iwamura, K. Sakurai, H. Shoga, V. Raghavan and K. Shiono (2009) Development of Three Dimensional Geologic Modeling System using Web-GIS. In: *Geoinforum-2009,* 25-26 June 2009, Okinawa, Japan, 2 pages.

11. H. Shoga, S. Masumoto, K. Sakurai, S. Nonogaki, **S. Ninsawat**, S. Iwamura, M. Mitamura and K. Shiono (2009) Three Dimensional Subsurface Geologic Modeling with Web-GIS in Western Osaka Plain using Borehole Data. In: *Geoinforum-2009,* 25-26 June 2009, Okinawa, Japan, 2 pages.

12. S. Masumoto, S. Nonogaki, **S. Ninsawat**, S. Iwamura, K. Sakurai, H. Shoga, V. Raghavan and K. Shiono (2009) Development of Three Dimensional Geologic Modeling System using Web-GIS. In: *Geoinforum-2009,* 25-26 June 2009, Okinawa, Japan, 2 pages.

13. H. Shoga, S. Masumoto, K. Sakurai, S. Nonogaki, **S. Ninsawat**, S. Iwamura, M. Mitamura and K. Shiono (2009) Three Dimensional Subsurface Geologic Modeling with Web-GIS in Western Osaka Plain using Borehole Data. In: *Geoinforum-2009,* 25-26 June 2009, Okinawa, Japan, 2 pages.

14. **S. Ninsawat**, V. Raghavan and S. Masumoto (2008) Development of Distributed Web Service for Geoprocessing and 3D Visualization in Web-GIS Clients. In: *Proceedings of the GIS-IDEAS 2008,* 4-6 December 2008, Hanoi, Vietnam, pp. 269-274.

15. S. Masumoto, S. Nonogaki, **S. Ninsawat**, S. Iwamura, K. Sakurai, V. Raghavan, T. Nemoto and K. Shiono (2008) Development of Prototype System for Three Dimensional Geologic Modeling based on Web-GIS. In: *Proceedings of the GIS-IDEAS 2008,* 4-6 December 2008, Hanoi, Vietnam, pp. 83-88.

16. S. Akoijam, P. Thi Mai Thy, **S. Ninsawat** and V. Raghavan (2008) Change Detection of Multi Temporal Remote Sensing Data using Principal Component, Case Study: Pimpri Chinchwad Municipal Coporation (PCMC) India. In: *Proceedings of the GIS-IDEAS 2008,* 4-6 December 2008, Hanoi, Vietnam, pp. 135-140.

17. P. Thi Mai Thy, S. Akoijam, **S. Ninsawat** and V. Raghavan (2008) Using Satellite Image to Detect the Urban Expansion in Can Tho City, Vietnam. In: *Proceedings of the GIS-IDEAS 2008,* 4-6 December 2008, Hanoi, Vietnam, pp. 147-152.

18. **S. Ninsawat**, V. Raghavan and S. Masumoto (2008) Service Oriented Architecture for 3D Geospatial Visualization in Web-GIS client. In: *Geoinforum-2008, 12-13 June 2008, Sapporo, Japan*, (Geoinformatics, 19(2), pp. 146-147).

19. S. Masumoto, **S. Ninsawat**, S. Nonogaki, S. Iwamura, K. Sakurai, V. Raghavan and K. Shiono (2008) Development of Prototype for Three Dimensional Geologic Modeling System based on Web-GIS. In: *Geoinforum-2008,* 12-13 June 2008, Sapporo, Japan, 2 pages.

20. K. Sakurai, **S. Ninsawat**, K. Shiono and S. Masumoto (2008) Support System for Lihofacies Correlation of Borehole data as a Basic Tool of Three Dimensional Geologic modeling on Web-GIS. In: *Geoinforum-2008,* 12-13 June 2008, Sapporo, Japan, 2 pages.

21. S. Katsura, **S. Ninsawat** and V. Raghavan (2008) Implementing Mobile GeoTagging Application using Free and Open Source Software. In: *Geoinforum-2008,* 12-13 June 2008, Sapporo, Japan, 2 pages.

22. **S. Ninsawat** and V. Raghavan (2007) Utilization of Distributed OGC Web Services for Analysis of Remote Sensing Data. In: *Proceedings of the Remote Sensing Society of Japan 2007,* 6-7 December 2007, Sakai, Japan, pp. 19-20.

23. **S. Ninsawat**, V. Raghavan and S. Masumoto (2007) Implementation of Distributed Geoprocessing System using WPS Open Standard. In: *Geoinforum-2007,* 21-22 June 2007, Shimane, Japan, 2 pages.

24. N. Hoa Binh, V. Raghavan, **S. Ninsawat** and M. Shibayama (2007) Development of Historical GIS for Hanoi City using GIS enabled Portal Framework. In: *Geoinforum-2007,* 21-22 June 2007, Shimane, Japan, 2 pages.

25. V. Raghavan, N. Hoa Binh, **S. Ninsawat**, H. Dinh Duan and M. Shibayama (2006) Implementing Historical GIS using Free and Open Source Software. In: *Proceeding of International Symposium on Digital Preservation of Historical Heritage in ThangLong – Hanoi*, 2006, pp.89-97.

26. **S. Ninsawat**, V. Raghavan, S. Masumoto and Y. Chemin (2006) From GrassLinks to Web Processing Services with GRASS GIS. In: *Proceedings of the GIS-IDEAS 2006*, 9-11 November 2006, Ho Chi Minh, Vietnam, pp. 322-327.

27. N. Hoa Binh, V. Raghavan, **S. Ninsawat** and M. Shibayama (2006) Implementing Spatially Enabled Portal and Content Management Systems. In: *Proceedings of the GIS-IDEAS 2006,* 9-11 November 2006, Ho Chi Minh, Vietnam, pp. 269-274.

28. D. Yoshida, **S. Ninsawat**, M. Darauay, M. Ramando, Regional Development Council II and V. Raghavan (2006) Development of Open Web-GIS Prototype for Regional Geographic Information Network Project in the Philippines Region II. In: *Proceedings of the GIS-IDEAS 2006,* 9-11 November 2006, Ho Chi Minh, Vietnam, pp. 371-376.

29. **S. Ninsawat**, V. Raghavan, D. Yoshida and S. Masumoto (2006) Adoption of AJAX and X3D Technology in Open Source Web GIS Application. In: *Geoinforum-2006,* 29-30 June 2006, Yamanachi, Japan, 2 pages.

30. N. Hoa Binh, V. Raghavan, **S. Ninsawat**, H. Dinh Duan and M. Shibayama (2006) Developing Spatially Enabled Portal for Historical GIS Application in Hanoi. In: *Geoinforum-2006,* 29-30 June 2006, Yamanachi, Japan, 2 pages.

31. **S. Ninsawat** and K. Honda (2004) The Application of GMS Remote Sensing Image Server for Mobile Devices. In: *Proceedings of the 25th Asian Conference on Remote Sensing,* 22-26 November 2004, Chaing Mai, Thailand, (D-4.9 WebGIS), pp.1200-1205.

32. **S. Ninsawat** and K. Honda (2004) Development of NOAA and Landsat Image Server using FOSS. In: *Proceedings of the FOSS/GRASS Users Conference,* 12 – 14 September 2004, Bangkok, Thailand, Online, 15 pages.

33. **S. Ninsawat**, K. Honda, T. Horanont, R. Yokoyama and A. Ines (2003) Remote Sensing Image Server based on WMS for GMS (Greater Mekong Sub-Region) Countries. In: *Proceedings of the 24th Asian Conference on Remote Sensing,* 3-7 November 2003, Busan, Korea, CD-ROM, 3 pages, (FA5 Spatial Data Infrastructure 2).

34. **S. Ninsawat**, N. Kumar Tripathi, M. Kusanagi, F. Borne and K. Jensen (2003) Mapping Coral Reefs of Phi Phi Island using Remote Sensing and GIS for Integrated Coastal Zone Management. In: *Proceedings of the Regional Conference on DIGITAL GMS,* 26-28 February 2003, Asian Institute of Technology, Thailand, 6 pages.

## 5. Papers in Workshops

None

## 6. Abstracts

1. P. Heawchaipahpum, N. Srisang and **S. Ninsawat** (2017) The study of the Royal-initiated projects by late King Bhumibol Adulyadej using Geoinformation Technology**.** In: CRMA Education Exhibition 2017, 14-15 November 2017, Nakornnayok, Thailand.

2. L. Thumprasen, **S. Ninsawat**, M. D. Hossain, T. Koottatep and Y. Sarathai (2017) Finding Appropriate Location and Service Area for Fecal Sludge Treatment Plant using GIS and Network Analysis. In: FSM4 Conference 2017, 19 - 23 February 2017, Chennai, India.

3. C. Wuthisakkasorn, B. R. Mutyala, **S. Ninsawat**, M. D. Hossain and P. Tangprasert (2016) Current Status of Renewal Energy in Thailand and Climate Change Impacts on Future Solar Power Generation**.** In: CRMA Education Exhibition 2016, 10-11 November 2016, Nakornnayok, Thailand.

4. J. Nakpradab**, S. Ninsawat,** C. Wuthisakkasorn and P. Tangprasert (2016) Patterns Analysis of Deforestation with Socio-economic and Physical Factors using GIS Technique in Nan Province**.** In: CRMA Education Exhibition 2016, 10-11 November 2016, Nakornnayok, Thailand.

5. S. Arunplod**, S. Ninsawat** and S. Lertlum (2016) 3D Modelling of Historical and Cultural Heritage using UAV Platforms, Case Study of Sulamani Temple, Bagan, Republic of Myanmar**.** In: CRMA Education Exhibition 2016, 10-11 November 2016, Nakornnayok, Thailand.

6. Y. Palung and **S. Ninsawat** (2015) Toward new technology of 360 Degree Virtual Reality for ultimate visualization**.** In: CRMA Education Exhibition 2016, 16-17 November 2015, Nakornnayok, Thailand.

7. A. Sanit and **S. Ninsawat** (2015) AIT Green Weather Station**.** In: CRMA Education Exhibition 2016, 16-17 November 2015, Nakornnayok, Thailand.

8. A.T.A. Peiris, S. Shrestha and **S. Ninsawat** (2015) Trends in Extreme Temperature and Rainfall Indices in Ping River Basin, Thailand. In: RFCC2015, 1-3 July 2015, Pathumthani, Thailand.

9. C. Sirirattanapol, **S. Ninsawat**, N. K. Tripathi and M. Nagai (2014) IndoorNavi: The Hybrid Indoor Navigation System based on WiFi and NFC Positioning Techniques. In: FOSS4G Asia 2014 conference, 2 - 5 December 2014, Pathumthani, Thailand.

10. M. D. Hossain, **S. Ninsawat**, S, Sharma, T. Kottatep and Y, Sarathai (2014) GIS Oriented Networking and Service Optimization Techniques for Faecal Sludge Management. In: FOSS4G Asia 2014 conference, 2 - 5 December 2014, Pathumthani, Thailand.

11. **S. Ninsawat** and Y. Tanaka (2012) Satellite Field Integrator based on OGC Web Services to enhance GEO science study. In: *APAN 33 Workshop,* 13- 17 February 2012, Chaing Mai, Thailand.

12. **S. Ninsawat** and Y. Tanaka (2011) SFI: Framework for Integration of Satellite Data and Field Sensor Data. In: *PRAGMA 21 Workshop,* 17 – 20 October 2011, Sapporo, Japan.

13. **S. Ninsawat** and S. Kato (2010) Development of Estimated Surface Air Temperature (ESAT) map based on OGC Web Services. In: *PRAGMA 19 Workshop,* 13 – 15 September 2010, Changchun, China.

14. **S. Ninsawat**, H. Yamamoto, R. Nakamura, A. Kamei and S. Tsuchida (2010) GEO Grid System based on OGC Framework for e-Science: Case Study Air Temperature and MODIS LST. In: *FOSS4G2010,* 6-9 September 2010, Barcelona, Spain.

15. R. Nakamura, H. Yamamoto, A. Kamei, T. Maeda, S. Tsuchida, **S. Ninsawat** and S. Nagai (2010) GEO Grid における衛星画像とその場観測データの統合. In: *日本地球惑星科学連合 2010年度連合大会,* 24-28 May 2010, Chiba, Japan.

16. **S. Ninsawat**, H. Yamamoto, A. Kamei, R. Nakamura, S. Tsuchida and T. Maeda (2010) Development of Integration Framework for Sensor Network and Satellite Image based on OGC Web Services. In: *EGU2010,* 2-7 May 2010, Vienna, Austria.

17. R. Nakamura, **S. Ninsawat**, H. Yamamoto, A. Kamei, N. Yamamoto and S. Tsuchida (2010) Integration of Satellite Imagery and In-situ Measurements on GEO Grid. In: *Workshop on Coral Reef Observing Technologies,* 5 March 2010, San Diego, USA.

18. R. Nakamura, N. Yamamoto, **S. Ninsawat**, Y. Tanaka, S. Sekiguchi, B. Cheng, F. Cheng and C. Zheng (2010) Routine Use of GEO Science Infrastructure in PRAGMA. In: *PRAGMA 18 Workshop,* 3-4 March 2010, San Diego, USA.

19. A. Kamei, **S. Ninsawat**, H. Yamamoto, R. Nakamura, S. Tsuchida and T. Maeda (2009) Integrated System of Satellite and Field Data for Mapping of Gross Primary Production. In: *Asia Flux Workshop 2009,* 27-29 October 2009, Hokkaido, Japan.

20. **S. Ninsawat** (2008) Federating Satellite data and Sensor data. In: *PRAGMA 17 Workshop,* 28 October 2009, Hanoi, Vietnam.

21. **S. Ninsawat**, R. Nakamura, H. Yamamoto, A. Kamei and S. Tsuchida (2009) Validation of Satellite Image with Ground Sensor Network based on OGG Web Services Framework. In: *FOSS4G2009,* 20-23 October 2009, Sydney, Australia.

22. **S. Ninsawat**, V. Raghavan and S. Masumoto (2008) Implementation of Distributed Service Oriented Framework for 3D Visualization in Web-GIS Clients, In: *FOSS4G2008,* 29 September – 3 October 2008, Cape Town, South Africa.

23. **S. Ninsawat** and V. Raghavan (2007) Open Source Participatory GIS Framework through Man-Machine Interactions. In: *Kansai Open Source Forum 2007,* 9-10 November 2007, Osaka, Japan.

24. **S. Ninsawat** and V. Raghavan (2007) Development of Geoprocessing Service with Realtime Data using WPS and SOS Open Standard. In: *FOSS4G2007,* 24-27 September 2007, Victoria, Canada.

25. **S. Ninsawat**, V. Raghavan, S. Masumoto, Y. Chemin and H. Nakano (2006) X3D Technology Approach for Developing 3D Web-GIS System. In: *FOSS4G2006,* 11-15 September 2006, Lausanne, Switzerland.

26. **S. Ninsawat** and K. Honda (2005) Development of NOAA and Landsat Image Server using Web Map Service. In: *the 19th Asia-Pacific Advanced Network,* 24-28 January 2005, Bangkok, Thailand, (EMWG: Web Mapping Services – I).

7. Development Project Reports

1. Developing GIS-based system for Sugar Cane management, Mitr Phol Sugarcane Research Center, 2016
2. Developing LBS on smartphone for Sugar Cane data collection, Mitr Phol Sugarcane Research Center, 2015
3. Smart PWA mobile application: GIS Mobile Application on iOS and Android device for supporting Thai Provincial Waterworks Authority. 2015
4. Asian Summer School in Bangkok 2017 funded by Chubu University, 2017
5. Asian Summer School in Bangkok 2016 funded by Chubu University, 2016
6. Asian Summer School in Bangkok 2015 funded by Chubu University, 2015
7. Asian Summer School in Bangkok 2014 funded by Chubu University, 2014
8. Asian Summer School in Bangkok 2013 funded by Chubu University, 2013
9. Asian Summer School in Bangkok 2012 funded by Chubu University, 2012
10. An investigation on disaster information dissemination system for local community in rural mountainous area in Asia, funded by Japan Science and Technology Agency (JST), 2012
11. Development of Three Dimensional Geologic Modeling System using Web-GIS, funded by Ministry of Education, Culture, Sports, Science and Technology (MEXT), 2009
12. Application of Web Mapping Technology for Malaria Case Management, funded by Royal Thai Government, 2005
13. UNESCAP Transportation Database, funded by UNESCAP, 2005
14. Web Map Service System for GMS countries, funded by Japanese Government (through JICA and GMS-AG), 2004
15. Road Management Research, funded by Japan Bank of International Cooperation, 2003

8. Non-refereed Publications

None

9. Patents

None

10. Invited Lectures and Keynote Addresses

1. Invited Lecture on “Network Analysis and pgRouting”, Department of Environmental Science, Faculty of Science, Thammasart University, Pathumthani, Thailand, 9th May, 2017

2. Invited Lecture on “Network Analysis and pgRouting”, Department of Geography, Srinakharinwirot University, Bangkok, Thailand, 6th May, 2017

3. Invited Lecture on “Machine Learning for Remote Sensing Image Classification, Faculty of Science, Thammasart University, Pathumthani, Thailand, 29th April, 2017

4. Invited Lecture on “Machine Learning for Remote Sensing Image Classification”, Department of Geography, Srinakharinwirot University, Bangkok, Thailand, 4th April, 2017

5. Invited Lecture on “Ubiquitous Computing and Location-Based Service (LBS) for the Spatial Problem Solving”, Department of Environmental Science, Faculty of Science, Thammasart University, Pathumthani, Thailand, 20th October, 2016

6. Invited Lecture on “Geoinformatics” in the training on " Technology development for climate resilience and efficient use of resources in the agricultural sector in Thailand" at National Science and Technology Development Agency (NSTDA) Conference Centre, Pathumthani, Thailand, 29th September 2016

7. Invited Lecture on “RS & GIS applications in water/agriculture/food security sectors” in the training on "Climate Services for Water, Agriculture and Food Sectors" for the participants from Ministry of Agriculture Development (MoAD) Nepal at Asian Institute of Technology, Pathumthani, Thailand, 21st July 2016

8. Invited Lecture on “Ubiquitous Computing and Location-Based Service (LBS) for the Spatial Problem Solving”, Department of Environmental Science, Faculty of Science, Silpakorn University, Nakornpathom, Thailand, 1st April, 2016

9. Invited Lecture on “Interoperable Geoinformatics for eScience”, Graduate School for Creative Cities, Osaka City University, Osaka, Japan, 24th November, 2015

10. Invited Lecture on “RSGIS application in feasibility studies of irrigation projects” in the training on training on "Feasibility Studies for Irrigation Projects" for the participants from Ministry of Energy and Water (MEW), Afghanistan, Asian Institute of Technology, Pathumthani, Thailand, 25th August 2015

11. Invited Lecture on “Database Management of Internet Mapping for Spatial Research Application”, Department of Natural Resources and Environment, Naresuan University, Phitsanulok, Thailand, 1st July, 2015

12. Invited Lecture on "Ubiquitous Geospatial in 2015", Department of Computer Science, Faculty of Science, Khon Kaen University, Khon Kaen, Thailand, 16th January, 2015

13. Invited Lecture on "Ubiquitous Geospatial in 2015", Department of Geography, Faculty of Liberal Arts, Thammsart University, Pathumthai, Thailand, 1st December, 2014

14. Invited Lecture on "Application of Remote Sensing", Department of Environmental Science, Faculty of Science, Silpakorn University, Nakorn Pathom, Thailand, 11st November, 2014

15. Invited Lecture on "Web GIS technology for effective data sharing", Faculty of Civil Engineering, Mahidol University, Nakorn Pathom, Thailand, October, 2013

16. OGC Tutorials: Southeast Asia International Joint Research and Training Program in High-Performance Computing Applications and Networking Technology, 6-10 December 2010, National Center for High-Performance Computing, Taichung, Taiwan.

17. OGC Web Services for Environment Monitoring: Southeast Asia International Joint Research and Training Program in High-Performance Computing Applications and Networking Technology, 6-10 December 2010, National Center for High-Performance Computing, Taichung, Taiwan.

18. Utilization of Satellite Image and Field Sensor for Environmental Study, Southeast Asia International Joint Research and Training Program in High-Performance Computing Applications and Networking Technology, 30th November – 4th December 2009, National Center for High-Performance Computing, Taichung, Taiwan.

19. Utilization of Real-time Data from Sensor Observation for Decision Support System based on OGC Web Services, GEOSS Sensor Web Workshop, 20th May 2009, Tsukuba, Japan.

11. Total number of citations to the faculty member’s published work, as shown by SCOPUS (excluding self citations).

On 20th January 2018
**SCOPUS Citation report:**

**Total Citation in SCOPUS: 33**
**H-Index: 3**
(*Print citation overview attached from SCOPUS*)

On 20th January 2018
**Google Scholar report:**
**Total Citation: 106**
**H-Index: 6**
(*Print citation overview attached from Google Scholar*)

**B. Research in progress**

1. Brief descriptions of current projects

I have been engaged in developing my professional research in following area

- Web GIS system and applications
- OGC Web Services
- Real-time or Near-time mapping
- Sensor Web applications
- Distributed Geospatial data sharing
- Crowd sourcing for geospatial data
- Geoinformatics for disaster and environment management
- Location-based service
- GIS-based Mobile application
- Free Open Source Software development
- Augmented Reality with LBS application
- Remote Sensing and GIS for Agriculture and Industrial
- GIS application for logistic and management
- Remote Sensing and GIS application for Hygiene and Sanitation

2. Brief descriptions of plans for future projects

I wish to continue those researches as indicated in section B.1. Recently, the two research project proposals were approved. There are proposals which have been submitted to EACEA, EU and The Hungarian National Research, Development and Innovation Office. Additionally, the project proposal for enhancing the sanitation and hygiene in Thailand is jointly developing with Dr. Thammarat Koottatep, SERD.

- Erasmus+ Capacity Building in Higher Education : Innovation on Remote Sensing Education and Learning (IRSEL) (Donor: EACEA, EU)

The wider objective of the project is to develop an innovative learning platform, a Learning Management System (LMS) for Asian countries, China and Thailand. The LMS will host 20 newly developed modules on remote sensing in the curricula of participating universities, improving the quality of higher education, delivering a background for studying the practical use of the remote sensing techniques. This would by time enhance the practical use of remote sensing on a wide range of applications serving the labour market and society. The competences and skills in the participating HEIs will be developed by the use of these learning modules. Additionally, the Knowledge Pool of high level eLearning teaching materials for a wider scientific and engineering community will be developed at each partner university with the support budget of 70,000 EUR

- Geoscientific Analysis of Urban and Rural Environment Issues with Remote Sensing Techniques. (Donor: The Hungarian National Research, Development and Innovation Office)

Urban development is considerable effects on both the inhabitants and the living organisms. Development means the urban sprawl and also the structural changes within the administrative border and calls into attention important research questions in an international level. Our research aims to investigate the urban environment and regarding that cities are parts of the element of a system, we involve their surroundings, too. Primarily, we intent to use remotely sensed databases and we analyze their applicability from several aspects. We apply multiband hyperspectral images and LiDAR data combined with drone surveys in a complex and multicriterial evaluation. We investigate both the artificial surfaces (e.g. roofs) and the urban habitats as system comprised of the elements of the inner patches and the ones outside the cities. We examine three cities with different size/number of inhabitants/relative relevance in Hungary and Thailand. These topics can provide valuable database for describing the urban related environment, which, based on the preliminary results, can be of international interest.

Additionally, the research proposal for enhancing the sanitation and hygiene in Thailand is jointly developing with Dr. Thammarat Koottatep, SERD. Few cities in Thailand possess even minimal sanitation systems. The absence of an established sanitation network forces many households to rely upon private septic tanks or to dispose of their waste directly into rivers and canals. The commonality of the latter practice, together with the prevalence of polluted shallow wells used for drinking water supply in urban areas, has led to repeated epidemics of gastrointestinal infections. The study will address the following research questions for an urban district with known water supply problems in Phuket and Tak province: Is contamination of the water supply a health risk? What are the risk factors for water contamination and enteric diseases? Can problems of supply water and health risks, if they exist, be spatially modeled? Can explanatory variables be identified, which can then be used to predict spatial patterns of water quality contamination and enteric diseases? This research proposal will be submitted to Thailand Research Fund.

**C. Research grants and sponsored projects (August 2011 – 20th January 2018)**

1. List of proposals submitted.

| S.N. | Title | Year | Sponsor | Status |
|---|---|---|---|---|
| 1 | Asian Summer School in Bangkok 2017 | 2017 | Chubu University | Submitted |
| 2 | GRANT-0455 MYA: Mandalay Urban Services Improvement Project - Capacity Development in Climate Change Resilient Urban Planning | 2017 | ADB | Not approved |
| 3 | Improving Safe and Reliable Transportation by Figuring out Weather Characteristics and Risks Affecting Operations of the State Railway of Thailand (SRT) : Phase I and Phase II | 2017 | WxBunka Foundation | Approved |
| 4 | Erasmus+ Capacity Building in Higher Education : Innovation on Remote Sensing Education and Learning (IRSEL) (Co-PI) | 2017 | EACEA, EU | Approved (Contract preparation) |
| 5 | Geoscientific Analysis of Urban and Rural Environment Issues with Remote Sensing Techniques. (Co-PI) | 2017 | The Hungarian National Research, Development and Innovation Office | Approved (Contract preparation) |
| 6 | Nan 4.0 : Innovation IT application for | 2017 | Thailand | Submitted |

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|---|---|---|---|---|
| | Promoting Tourism and Cultural in Nan province | | Research Fund | |
| 7 | Developing Spatial Sugarcane Density and Yield Estimation using High Resolution Image from UAV | 2017 | Thailand Research Fund | Not approved |
| 8 | Asian Summer School in Bangkok 2016 | 2016 | Chubu University | Approved/Completed |
| 9 | Comparative risk assessment of hydrologic hazards and adaptation policy in Jiulong river and Chao Phraya watershed (PI: Dr.Vilas Nitivattananon ) | 2016 | National Research Council of Thailand | Approved |
| 10 | Climate change impacts on floods and droughts in Songkram River Basin, Thailand (PI: Dr. Sangam Shrestha) | 2016 | SEVIR-Mekong | Not approved |
| 11 | Asian Summer School in Bangkok 2016 | 2016 | Chubu University | Approved/Completed |
| 12 | Developing GIS plugins for estimating sugar cane yield | 2016 | Mitr Phol Sugarcane Research Center | Approved/Completed |
| 13 | ICT Research Capacity Development on “Internet of Things” at AIT | 2016 | Thailand Research Fund | Not approved |
| 14 | GIS Oriented Networking and Service Optimization Technique for Faecal Sludge Management (Phase 2) | 2016 | Dr. Thammarat Koottatep, SERD, AIT | Approved |
| 15 | The Vetiver Tracking System and App | 2016 | Thai Office of the Royal Development Projects Board | Submitted |
| 16 | Developing Decision Support System for Monitoring Severe Weather condition and Disaster effect on Agriculture production | 2016 | CPF Trading Co Ltd (CP, BKP) | Not approved |
| 17 | Developing GIS-based system for Sugar Cane management (Cane GIS and Cane GIS 2015 project) | 2015 | Mitr Phol Sugarcane Research Center | Approved/Completed |
| 18 | Identifying Specific Diseases and Pests on Sugarcane Leaves and Trunks using Image Processing (Co-Pi) | 2015 | Mitr Phol Sugarcane Research Center | Approved/Completed |
| 19 | Asian Summer School in Bangkok 2015 | 2015 | Chubu University | Approved/Completed |
| 20 | Asian Summer School in Bangkok 2014 | 2014 | Chubu University | Approved/Completed |
| 21 | Developing Georeferencing module in Quantum GIS for Thai Provincial Waterworks Authority | 2014 | Thai Provincial Waterworks Authority | Not approved |
| 22 | Nakorn Nayok Smart Province Demonstration Project | 2014 | Ministry of Information and Communication Technology | Not approved |
| 23 | SERVIR Mekong | 2014 | USAID | Not approved |
| 24 | Developing Virtual Globe Application | 2014 | Thammasat | Not approved |

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| | for Geography Education of AEC using Free Open Source Software | | University | |
| 25 | Smart PWA mobile application: GIS Mobile Application on iOS and Android device for supporting Thai Provincial Waterworks Authority | 2013 | Thai Provincial Waterworks Authority | Approved/Completed |
| 26 | Asian Summer School in Bangkok 2013 | 2013 | Chubu University | Approved/Completed |
| 27 | Development of Database and Web GIS System for Supporting Natural Resources and Forest Fire Crisis Management in Kuan Kreang Peat Swamp Forest | 2012 | National Research Council of Thailand | Not approved |
| 28 | Asian Summer School in Bangkok 2012 | 2012 | Chubu University | Approved/Completed |
| 29 | Prototype system of Crowd Sourcing data for Disaster Mitigation | 2012 | Thailand's National Electronics and Computer Technology Center | Not approved |

2. List of research grants and sponsored projects. For each grant and project specify the project duration, overhead and faculty time income to the institute.

1. Title : Innovation on Remote Sensing Education and Learning (IRSEL)

| | |
|---|---|
| Grants/Sponsor | Erasmus+ Capacity Building in Higher Education |
| Duration | 3 years |
| Cost/Overhead (Baht) | Total budget around 5,599,984<br>(Contract preparation) |
| Description | The wider objective of the project is to develop an innovative learning platform, a Learning Management System (LMS) for Asian countries, China and Thailand, which already have relevant activity in the field of RS. Though the content of the implemented LMS would not correspond to any level of tertiary level education, it is basically planned to be developed for meeting from BSc to MSc level of RS related disciplines.<br><br>The LMS to be developed at 4 Asian universities will serve the practical applicability of remote sensing data for wide range of disciplines (including different tasks of Environmental protection, Agriculture, forestry and fishery, Physical sciences, Engineering and engineering trades, Transport services, Security services). The aim of the LMS is to foster the uptake of remote sensing applications to boost the benefits that space brings to society and the wider economy. 8 partnership members (4 EU and 4 Asian) will contribute to develop 20 newly developed modules on remote sensing in the curricula of participating universities, improving the quality of higher education, delivering a background for studying the practical use of the remote sensing techniques. The total budget for 3 years period is 990,044 EUR |

2. Title : Installation of tools to prevent and detect the natural disasters of the State Railway of Thailand.

| | |
|---|---|
| Grants/Sponsor | WxBunka Foundation |
| Duration | 2 years |
| Cost/Overhead (Baht) | Total budget : 2,976,320 THB<br>PI OH : 9,940, PI Recovery : 14,200; Total : 24,140 (2017) |
| Description | Our goal is decreasing and ultimately eradicating railway accidents by setting the operational rules for avoiding weather risks like heavy rains and gust winds that affect trains. It helps save the lives of passengers and conductors.<br><br>This effort will be the first step. We will install weather observation equipment over the next year we will observe the weather using this equipment and also using the weather observation to analyze weather characteristics and risks statistically for the SRT. |

3. Title : Asian Summer School in Bangkok 2017
Title : Asian Summer School in Bangkok 2016
Title : Asian Summer School in Bangkok 2015
Title : Asian Summer School in Bangkok 2014
Title : Asian Summer School in Bangkok 2013
Title : Asian Summer School in Bangkok 2012

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|---|---|
| Grants/Sponsor | • Chubu University<br>• Visionary Value Japan Inc.<br>• Advanced Intelligence and Earth System Science Co.,Ltd<br>Siam Cement Group |
| Duration | 1 year |
| Cost/Overhead (Baht) | PI OH : 19,880, PI Recovery : 28,400; Total : 48,280 (2017)<br>PI OH : 11,044.45, PI Recovery : 15,770.78; Total : 26,815.23 (2016)<br>PI OH : 55,000 (2015)<br>PI OH : 58,100 (2014)<br>PI OH : 114,296.47 (2013)<br>PI OH : 103,231 (2012) |
| Description | With the cooperation of the Chubu Institute of Advanced Studies, Chubu University, and Remote Sensing and GIS (RS&GIS) Field of Study, Asian Institute of Technology (AIT) organized the “Asian Summer School in Bangkok” program at AIT, Pathumthani, Thailand. The theme of the program was “Geoinformatics and Issues on Sustainable Development in Asia”.<br><br>The Asian Summer School target on the undergraduate, graduate students and researchers who are interested in GIS and Remote Sensing, sustainable development and issues in environment, megacities, communities, natural resource management, disaster management in Asian, as well as those who are seeking for international learning experience in English. Students will attend lectures related to sustainable |

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|---|---|
| | development in Asia, Geoinformatics (GIS, RS and related technology) and its contribution to sustainable development, in order to deepen the awareness on status and issues in Asia where a rapid development is taking place, as well as on the usefulness of GIS as a tool. Student is expected to realize rapid development and issues in Asia through site visits as well. The lectures will be conducted in English, thus students will understand the importance of English for absorbing and sharing knowledge. This course will foster sense and awareness among students for international society and for issues that will be linked to undergraduate projects or master thesis. |

4. Title : UAV Map

| | |
|---|---|
| Grants/Sponsor | Mitr Phol Sugarcane Research Center |
| Duration | 6 months |
| Cost/Overhead (Baht) | PI OH : 19,880, PI Recovery : 28,400 ; Total : 48,280 (2016) |
| Description | To develop a GIS plugins for analysis UAV image and estimating the density of sugarcane. In this study, a ratio of green pixels in specific size of block are the main factor for classification. Then, the field work data including height, diameter, a number stalk will be used to estimate the sugar cane yield. |

5. Title : Smart PWA mobile application: GIS Mobile Application on iOS and Android device for supporting Thai Provincial Waterworks Authority

| | |
|---|---|
| Grants/Sponsor | Thai Provincial Waterworks Authority (Subcontractors with D.T.S. Technology Partnership Limited) |
| Duration | 2 years |
| Cost/Overhead (Baht) | Total budget : 500,000 THB<br>PI OH : 10,400 (2015)<br>PI OH : 17,920 (2014)<br>PI OH : 71,680 (2013) |
| Description | The purpose of this project is to develop GIS mobile application on tablet device for both of iOS and Android operating system that can support user's regular operation. The developed application provides powerful GIS analysis function such as "Pipeline Risk Identification ", "Leak Detection and Water Loss Control tool" and "Water Consumption Analysis tool". The developed function will be performed in the cloud environment and rendering the results on tablet devices under constrain of limited computing resources of the device and 3G bandwidth.<br><br>The base system is constructed by the integration of jQuery mobile, HTML5, CSS and JavaScript and the integration of Web-GIS Engine, GIS and relational database to support for OGC WMS (Web Map Service), and OGC WFS (Web Feature Service). |

6. Title : Cane GIS 2015

| | |
|---|---|
| Grants/Sponsor | Mitr Phol Sugarcane Research Center |
| Duration | 1 year |
| Cost/Overhead (Baht) | Total budget : 456,000 THB<br>PI OH : - 787.59 (2016)<br>PI OH : 66,399.99 (2015) |
| Description | To develop GIS-based system for supporting the Sugar Cane farm in the concept of SmartFarm, In this project, mobile application on Android tablet device will be developed as the supporting tools for Mitr Phol Sugarcane Research Center for regularly field survey tasks. The GPS, Camera, mobile network communication of device will facilitate the staff and increasing performance, accuracy of data capturing operation. Additionally, the Web-GIS application will be developed to provide the powerful GIS analysis function cooperated with real-time survey data and available of remote sensing data for better sugar cane farm and industrial management. |

7. Title : FOSS4G

| | |
|---|---|
| Grants/Sponsor | Provincial Water Works Authority |
| Duration | 1 year |
| Cost/Overhead (Baht) | Total budget : 100,000 THB<br>PI OH : 20,000 (2015) |
| Description | To conduct an advance training on Free and Open Source Software for Geospatial (FOSS4G) which including Developing customization GIS application using PyQGIS, Advance geospatial analysis using Geospatial Database etc. |

8. Title : Cane GIS

| | |
|---|---|
| Grants/Sponsor | Mitr Phol Sugarcane Research Center |
| Duration | 4 months |
| Cost/Overhead (Baht) | Total budget : 340,000 THB<br>PI OH : 28,507.33 (2015)<br>PI OH : 17,734.67 (2014) |
| Description | To develop GIS-based system for supporting the Sugar Cane farm in the concept of SmartFarm, In this project, mobile application on Android tablet device will be developed as the supporting tools for Mitr Phol Sugarcane Research Center for regularly field survey tasks. The GPS, Camera, mobile network communication of device will facilitate the staff and increasing performance, accuracy of data capturing operation. Additionally, the Web-GIS application will be developed to provide the powerful GIS analysis function cooperated with real-time survey data and available of remote sensing data for better sugar cane farm and industrial management. |

9. Title : Sugarcane (co-PI with Dr. Matthew Dailey)

| | |
|---|---|
| Grants/Sponsor | Mitr Phol Sugarcane Research Center |
| Duration | 1 year |
| Cost/Overhead (Baht) | Total budget : 800,000 THB |

| | |
|---|---|
| | PI OH : 28,880 (2016)<br>PI OH : 83,600 (2015) |
| Description | The main objective of this project is to find the possibility of using machine learning and image processing techniques to build an automatic system which is capable of detecting and classifying specific diseases infecting the sugarcane leaves and trunks, and to output useful indices to analyze the severity of the disease. |

## V. Service/Outreach

### A. Professional Service

1. Leadership in policy and program development in professional organizations.

None

2. Participation in organizational responses to policy, practice, or structural issues, which affect the field.

None

3. Significant elective or appointed offices held.
   (a) Charter Members, OSGeo (Open Source Geospatial) Foundation (2013-present)
   (b) Thai OSGeo Chapter Secretary (2018-07-12 – present)
4. Organization of training courses, conferences, seminars, and workshops.
   (a) Organizer, FOSS4G Thailand Seminar, 23 - 24 July 2018, Asian Institute of Technology
   (a) Asian Summer School program in Bangkok 2018, 13 - 24 August 2018, Asian Institute of Technology
   (b) Technical Committee of International Forum on Education for Rural Transformation (IFERT), 13 – 15 November 2017, Asian Institute of Technology
   (c) Asian Summer School program in Bangkok 2017, 21 August – 1 September 2017, Asian Institute of Technology
   (d) Asian Summer School program in Bangkok 2016, 15 – 26 August 2016, Asian Institute of Technology
   (e) Asian Summer School program in Bangkok 2015, 17 – 28 August 2015, Asian Institute of Technology
   (f) Asian Summer School program in Bangkok 2014, 18 - 29 August 2014, Asian Institute of Technology
   (g) Asian Summer School program in Bangkok 2013, 19 - 30 August 2013, Asian Institute of Technology
   (h) Asian Summer School program in Bangkok 2012, 20 - 31 August 2012, Asian Institute of Technology
   (i) Steering Committee and the Scientific Committee, Free & Open Source Solutions for Geoinformatics-Asia Conference, 7 – 10 December 2016, Hyderabad, India
   (j) Advance training on Free and Open Source Software for Geospatial (FOSS4G), 31 August – 4 September 2015, Asian Institute of Technology
   (k) Programme Coordinator, Free & Open Source Solutions for Geoinformatics-Asia Conference, 2 - 5 December 2014, Asian Institute of Technology
   (l) VN - GEO Grid Training Courses for Computational System and Applications in Processing the Global Earth Observation Data, 5-6 December 2011, Vietnam Academy of Science and Technology, Ho Chi Minh, Vietnam

(m) Spatial Data Sharing using Free and Open Source Software course in "The Open Source Geographic Information System (GIS) Technology for Sustainable Management of Natural Resources and Agricultural Production" program.
(i) JICA-GIS 2008, 15-18 September 2008
(ii) JICA-GIS 2007, 10-13 September 2007
(iii) JICA-GIS 2006, 4-7 September 2006

5. Editing or serving on advisory boards of journals
None

6. Government or international organization panels, expert witness, reports to government or international agencies
None

7. Participation in development projects
None

**B. Significant Institute Committee Service** (Indicate the period of service)

1. Field-of-Study/Program
(1) AIT Promotion activities – regular in Thailand
(2) Search panel for administrative officer for RSGIS
(3) Search panel for Research Specialist for RSGIS
(4) Programme coordinator – Unified International Bachelor-Masters Degree Program: Goeinformatics between Chaing Mai University and AIT
(5) Curriculum of RSGIS program

2. School
(1) Search panel for the faculty selection process for RSGIS
(2) Member Task Force for AIT relocating operation (Arrange SET research student temporary office in King Mongkut's Institute of Technology Latkrabang) – November 2011 – March 2012

3. Institute
(1) RTG Scholarship Committee - June,2017
(2) RTG Scholarship Committee - June,2015
(3) RTG Scholarship Committee - June,2014

**C. Administrative service**

1. Field-of-Study/Program
(1) Degree Program Committee Chairs, RSGIS program, ICT since January 2018 - present
(2) Interim Coordinator, RSGIS FoS since January 2015 – January 2017

2. School
(1) Acting Head of Department ICT

3. Institute
(1) Member Task force for drafting the 11th AIT-RTG Cooperation Plan
(2) Member Task force brainstorm and arrange for the visit of Her Royal Highness Princess Maha Chakri Siridhorn
(3) Cooperate with Google Maps for organizing Google Street View data collection for AIT campus.

**D. Promotion and Marketing (Briefly describe role or involvement)**

1. SET Promotion trip to Silpakorn University, Nakorn Pathom on 22nd February 2019
2. RSGIS Promotion trip to Khon Kaen University, Khon Kaen on 30th November 2018
3. RSGIS Promotion trip to SWU University, Bangkok on 15th November 2018
4. RSGIS Promotion trip to Kasetsart University, Bangkok on 24th October 2017
5. ICT Promotion trip to Ubon Ratchathani University, Ubon Ratchathani on 5th April 2017
6. ICT Promotion trip to Mae Fah Luang University, Chiangrai on 29th January 2017
7. ICT Promotion trip to Chiangmai University, Chiangmai on 28th January 2017
8. ICT Promotion trip to Maejo University, Chiangmai on 28th January 2017
9. RSGIS Promotion trip to Kasetsart University, Bangkok on 25th January 2017
10. SET Promotion trip to Naresuan University, Pitsanulok on 13rd January 2017
11. SET Promotion trip to Silpakorn University, Nakorn Pathom on 1st April 2016
12. SET Promotion trip to the Khon Kaen University, Khon Kaen on 10th March 2016
13. SET Promotion trip to Kasetsart University, Bangkok on 9th March 2016
14. Organize RS&GIS FoS Promotion activities in the Khon Kaen University, Khon Kaen on 16th January 2015
15. Organize RS&GIS FoS Promotion activities in the 7th Geography and Geo-informatics Undergraduate Conference of Thailand, which is the largest conference of Geography and Geo-informatics Undergraduate study in Thailand, Chiang Mai on 24 - 25 December 2014
16. SET Promotion trip to Hanoi University of Mining and Geology, Hanoi on 24th April 2014
17. SET Promotion trip to PetroVietnam, Hanoi on 23rd April 2014
18. SET Promotion trip to Chiang Mai Rajabhat University, Chiang Mai on 7th March 2014
19. SET Promotion trip to Rajamangala University of Technology Lanna, Chiang Mai on 6th March 2014
20. SET Promotion trip to King Mongkut's Institute of Technology Ladkrabang, Bangkok, 28th November 2013
21. Organize RS&GIS FoS, SET Promotion booth in the 5th Thai Geography and Geoinformatics Student Conference, Thamasart University, 25-26 October 2012
22. SET Promotion trip to Kasetsart University, Bangkok on 27th March 2012
23. SET Promotion trip to Silpakorn University, Nakorn Pathom on 8th March 2012
24. SET Promotion trip to Thammasart University, Pathumthani 29th February 2012
25. SET Promotion trip to Chiang Mai Rajabhat University and Maejo University, Chiang Mai on 23rd December 2011

**E. Community Service**

1. Consulting activities
   (1) Chair of Geosciences working group in Pacific Rim Applications and Grid Middleware Assembly (PRAGMA) group
   (2) Serving as Technical Committee member of Open Geospatial Consortium (OGC) standards
   (3) Member in several of OGC Standard Working Group (SWG)
      (a) Sensor Observation Service (SOS) 2.0 SWG
      (b) SensorML 2.0 SWG
      (c) Observation & Measurement (O&M) 2.0 SWG

(d) Sensor Web Enablement (SWE) Common SWG
(e) Web Processing Service 2.0 SWG
(f) Web Coverage Service 2.0 SWG

(4) Member of consulting working group for AIT-Nakorn Nayok Smart Province team in a subgroup of "City Planning and Logistics"

2. Serving on program committees
(1) Serving as Steering Committee and the Scientific Committee, Free & Open Source Solutions for Geoinformatics-Asia Conference, 7 - 10 December 2016, Hyderabad, India
(2) Serving as Programme Coordinator, Free & Open Source Solutions for Geoinformatics-Asia Conference, 2 - 5 December 2014, Asian Institute of Technology
(3) Serving as thesis committee member of the master and doctor student from WEM, CS, EEM, IM, UEM and ASE
(4) Serving as PhD Thesis committee member of student from Mahasarakham University, Thailand
(5) Serving as Master Thesis committee member of student from Mahidol University, Thailand
(6) Serving as Master Thesis committee member of student from Naresuan University, Thailand
(7) Serving as Master Thesis committee member of student from King Mongkut's University of Technology Thonburi University, Thailand
(8) Serving as Program faculty committee in WEM, AIT

3. Refereeing of journal articles, books, grant proposals, etc.
None

4. Serving as external examiner
(1) P'Jo
(2) P'Jo
(3) SIIT
(4) KMITT
(5) Mahidol

**VI. Ability to Cooperate**

AIT attaches great significance to the ability to co-operate. This includes the capacity to work jointly with colleagues and superiors.

1. Joint research activity.
(1) Cooperate with Prof. Kiyoshi Honda from Chubu University to launch the Asian Summer School program in 2012, 2013, 2014, 2015, 2016, 2017 and 2018. The participants from 12 countries are attended the program for two weeks.
(2) Initiating the research project of Innovation on Remote Sensing Education and Learning (IRSEL) with Dr. Lorant Foldvary, Obuda University, Hungary and six more partner universities from Europe and Asia.
(3) Initiating the research project of Geoscientific Analysis of Urban and Rural Environment Issues with Remote Sensing Techniques with Dr. Szabó, Szilárd, SERD, University of Debrecen
(4) Co-PI project of Comparative risk assessment of hydrologic hazards and adaptation policy in Jiulong river and Chao Phraya watershed with Dr.Vilas Nitivattananon, UEM, SERD, AIT

(5) Jointly develop research proposal in topic of "Influences of flash droughts on adaptation strategies in Water Resources Management in Southeast Asia" with Dr. Sangam Shrestha
(6) Jointly develop research proposal in topic of "Effective Faecal Sludge Planning to Minimize Environmental Pollution and Protect Public Health" with Dr. Thammarat Koottatep, SERD
(7) Jointly develop research proposal in topic of "Climate change impacts on floods and droughts in Songkram River Basin, Thailand" with Dr. Sangam Shrestha
(8) Jointly develop research proposal in topic of "Mandalay Urban Services Improvement Project - Capacity Development in Climate Change Resilient Urban Planning" with researcher of AIT Solution and other AIT faculties
(9) Initiating the research of applying the GIS for logistic and Vehicle Routing Problem with Dr. Thammarat Koottatep, SERD, AIT in the topic of "GIS Oriented Networking and Service Optimization Technique for Faecal Sludge Management"
(10) Work with Dr. Sornthep Vannarat, Large Scale Simulation Research Laboratory (LSR), NECTEC in project proposal of "Crowd Sourcing for Disaster Data Sharing"
(11) Work with Dr. Daroonwan Kamthonkiat, Department of Geography, Faculty of Liberal Arts, Thammasat University in project of "Development of Database and Web GIS System for Supporting Natural Resources and Forest Fire Crisis Management in Kuan Kreang Peat Swamp Forest"
(12) Co-PI project of Identifying Specific Diseases and Pests on Sugarcane Leaves and Trunks using Image Processing with Dr. Matthew Dailey, CSIM, AIT

2. Joint pedagogical activity.
(1) Chair in Master Thesis in CS and ICT, SET, AIT
(2) Co-teaching of DPMM course IN84.21 Remote Sensing and GIS for Disaster Mitigation
(3) Co-teaching of RSGIS course AT76.03 Remote Sensing and AT76.13 Remote Sensing Data Analysis
(4) Co-teaching of RSGIS course AT76.10 Advanced Remote Sensing
(5) Co-teaching of RSGIS course AT76.9041 Selected Topic Research Methodology in Geoinformatics

3. Interaction with the public and private sectors.
(1) Work with Weather News, Inc and State Railway of Thailand with research project "Installation of tools to prevent and detect the natural disasters of the State Railway of Thailand."
(2) Work with GIS department of Thai Provincial Waterworks Authority with research project "Smart PWA mobile application: GIS Mobile Application on iOS and Android device for supporting Thai Provincial Waterworks Authority" and also informally consultancy
(3) Active involve with dominate private sector in field of GIS including Tom Tom, ABICO, Mitr Phol for idea exchange, inquiry the needs of market and research collaboration.
(4) Initiate research project of "Cane GIS", "Cane GIS 2015" and "UAV Map" with Mitr Phol Sugarcane Research Center
(5) Initiate research project with Thai Office of the Royal Development Projects Board and CPF Trading Co Ltd (CP, BKP)
(6) Also informally through research cooperation with public sectors especially I have regularly visited Dr. Sornthep Vannarat from Large Scale Simulation Research

Laboratory (LSR), NECTEC for every two weeks for research discussion and advisory.

**VII. Personal Statement**

Nowadays, the Web GIS have very extensively developed and is being widely used as scores of Internet users are gaining exposure to spatial data for day-to-day needs. There are an extremely needs of skillful human resource who can develop a useful application for society. Before I joined AIT as faculty member, there was no specific course offer on this topic. Some introduction and applications of Web GIS technology were taught in the course of "Advanced Remote Sensing" and "Geographical Information System". During the first year of my career at AIT, I have developed and successfully lead a new area of specialization within RSGIS/SET: "**Web GIS Technology", "Free and Open Source software for Geospatial**", "**Unmanned Aerial Vehicle Application and Processing**" and "**Positioning and Location-Based Services Technology**". Based on a web survey AIT is perhaps the only university in Asian Developing counties where specific course for Web GIS Technology is offered. There were very few students whose thesis research was related to Web GIS technology compared with other research topics since student have not adequate knowledge and lack of practical skill and support software for developing research in the topic of Web GIS system and its applications. After both area have been brought to RSGIS, AIT, there are more emergence research related to Web GIS technology, Mobile Application development, Crowd Sourcing and Social Network related. In 2013, I initiated a project of "Smart PWA GIS mobile application for supporting Thai Provincial Waterworks Authority". The developed application provides powerful GIS analysis function such as "Pipeline Risk Identification ", "Leak Detection and Water Loss Control tool" and "Water Consumption Analysis tool".

Recently, two projects with Mitr Phol Sugarcane Research Center are completed. In these project, mobile application on Android tablet device are developed as the supporting tools for Mitr Phol Sugarcane Research Center for regularly field survey tasks. The GPS, Camera, mobile network communication of device was integrated to facilitate the staff and increasing performance, accuracy of data capturing operation for collect huge amount of data in a very simplified manner and without increasing burden on office personnel in form of android application developed using Location-Based Services. The customized Web GIS application provides a better solution for analyzing and visualizing collected data to monitor the sugar cane productivity. The geospatial analyze functions generate simplified color map and charts This will help them to see in which areas yield is high or low and to track the reason of low yield. With this success, the utilization of Web GIS, LBS is not limited for just online sharing data and visualizing map, but it can be used as the decision support tools for private sectors. Both projects were developed by Free and Open Source software as well and the system can be practical used. The research outcome and practices from both project were initiated the new course in RSGIS program. I started the course "**Positioning and Location-Based Services Technology**" in August 2017 and "**Unmanned Aerial Vehicle Application and Processing**" and "**Positioning and Location-Based Services Technology**" in January 2018. The industrial sector is looking for students who have knowledge and practical experience in both technologies.

I always follow the "learner-centered" approach by encouraging the students into participatory learning process by questioning and proving the comments. I am always open and available for student anytime. Student can inquiry my availability from online Google Calendar since I always update my schedule from computer and smartphone. Regularly, research student will present their progress every week to ensure that they are doing satisfactory progress and also proving the comments for the research. My student evaluation has been so far very good, however I always very high respect of the student's feedbacks and improve myself if it is necessary.

CERTIFICATION: I, the undersigned, certify that, to the best of my knowledge and belief, these bio data correctly describe myself, my qualifications and my experience. I understand that any willful misstatement described herein may lead to my disqualification.

SIGNATURE:

_____

DATE: _____

Day / Month / Year